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REVIEWS AND ABSTRACTS OF LITERATURE

Principles of Secondary Education. CHARLES DE GARMO. Vol. II. *Processes of Instruction.* New York: The Macmillan Co. 1908. Pp. 200.

Education has still to fight for recognition as a subject of serious scientific study, and the fate of a new book by a leader in the field becomes in consequence a matter of more than common interest to protagonists of the cause. I may be pardoned, therefore, if in writing of Professor De Garmo's original and important undertaking I stray somewhat from the confines of a conventional review. The god of limits will have his full due, perhaps, if I first endeavor to present in brief the contents of the recent volume, and venture a humble opinion of its worth.

A word, however, as to its place and scope. It is the second in a series of three, which are to cover every phase of secondary education (the high-school period of our public system). The first volume, which appeared in 1907, dealt with the studies; the present volume deals with processes of instruction—methods of teaching; the third is to deal with processes of training. The aim and the plan of the series are admirable; and every student of education must rejoice that Professor De Garmo has set himself to this task. Education is progressing very properly according to the Spencerian formula—continuous differentiation of function in a constantly growing unity, and a study which serves to define the work of a part in its organic relation to the whole is heartily to be welcomed. This the present volume should help to do, by discussing the special nature and functions of the teaching process in the high-school period.

Professor De Garmo says in his preface: "It is to the new method of Bacon, refined, corrected, and supplemented by the older method first fully described by Aristotle, that the world owes its present condition and rate of progress. By whatever path he may prefer, the teacher must go back to these primal sources of thought and efficiency for his teaching models, because there are no others. This volume seeks in due measure to accomplish for the young teacher what Mill and Jevons and Mach have done for the man of science; namely, to impress upon him the few but vital mental processes that alone lead to enduring results."

The book is in two parts: the first discusses the "Scientific Basis for High-School Methods"; the second, "Scientific Method in High-School Instruction." The first part deals in order with the acquisition of facts, the explanation of facts, and forms of solution for the problem; it is an admirably lucid account of the ways in which the mind works in attaining knowledge—a purely logical discussion, but enlivened by concrete instances and well-selected historical illustrations.

The second part deals first with the educational status of the high-school pupil; here in eight pages Professor De Garmo has stated significantly and precisely the conditions which control the teacher in organizing his material. An immature mind; a body of knowledge already well authenticated, well developed; why not simply store the mind with the knowledge? Because in adult life men and women must know how to use their knowledge, and because they must have power to acquire new knowledge. Hence the pupil must be led constantly to apply what he has been taught; hence teaching must not be telling, but a process wherein the pupil gets at his own truth under direction. As the mind of man must work in the discovery of truth hitherto unknown, so the mind of the child must work in the personal rediscovery of the truths men have already mastered. No power of thought can otherwise result. But thus to rediscover the whole body of known truth is impossible in the time allowed; therefore in each subject the teacher must select the typical, important, "developing" facts, concepts, and principles, and direct the activity of the pupil upon these as upon problems to be solved. I know of no clearer, simpler, or more cogent presentation of the necessities of the educative process as they affect its subject-matter. One can only regret that just at this point there is no discussion of how the pupil is to get at the problems;—on the basis of his own motives, or by coercion of the teacher; as an individual merely, or as a member of a group; to supplement a lack felt in his own experience, or to get ahead in the course of study? Professor De Garmo may intend to treat these questions in his third volume, but he ought here, I think, at least to have foreshadowed his views, for formal method is but an incident in the teacher's task of organizing the experience of the pupil, and the way in which the pupil is to get at his problems, deal with them, and test his results is on every count more important than the organization of the subject-matter itself.

There are but two methods for the discovery of truth, as the preface intimated, the inductive and the deductive. In each, as the pupil must use it, there are three stages: the processes of apperception, or the acquisition of the facts with reference to the problem to be defined; the processes of thought, or the explanation of the facts—the solution of the problem (as a problem of discovery); and the processes of application, drill in the use of knowledge. The Herbartian "formal steps" are here plainly indicated; but Professor De Garmo is not narrowly Herbartian in insisting that method shall always be inductive. He recognizes distinctly a "deductive approach" in which facts are acquired to test hypotheses framed in advance upon principles already known.

A separate chapter is wisely devoted to the application-step in method, the step most frequently and disastrously ignored in high-school instruction. A passage from this chapter (p. 157) affords a convenient summary of Professor De Garmo's formulation of scientific method in the high school: "Among the most familiar and most practised forms of application as a stage of method are those almost universally used in teaching mathematics and languages. Authority, observation, and experiment, here as elsewhere, furnish the data; inductive or deductive reasoning leads to their comprehension in the form of definition, cause, classification, or of generalization as seen in the theorem, rule, formula, principle, or law; while application tests these conclusions on new data, and extends them to a multitude of new cases, thus greatly enriching the content of knowledge, strengthening the grasp of fundamentals, and most important of all, lifting insight to the plane of efficiency."

The book closes with an interesting chapter on combinations and variations of the two fundamental methods. The style is clear and pleasing; when need be, powerful. The method of the book itself is predominatingly deductive. The stage of application is provided for by topics for discussion; but hardly any of the distinctions to be learned are presented in problem form: the book itself, that is, does not completely provide for that process of instruction which it recommends.

So far the contents of the book; an opinion of its worth, in the light of its purpose, will be still within the limits of a review. The young teacher should find it highly profitable, but difficult. It will give him a logical basis to which he may refer many problems of class-room procedure; but he will need to apply himself conscientiously to the topics for discussion if he is to retain the logical distinctions of the book "for ready reference," or to make them his, as the preface hopes, to such an extent that he proceeds upon them instinctively. For the book confines itself strictly to the logical point of view; it deals with universal preconditions for the sequence, form, and arrangement of subject-matter in a lesson. The concrete situation which the teacher is to face is used lavishly for illustration, but it does not furnish the point of departure for discussion of the problems in method; and the book omits too often any discussion of how differences in aim in different schools and in different subjects will determine methods and the selection of topics. These things the young teacher ought to know: if he is to teach physics in a general high school, German in a commercial high school, or English in a classical high school, he ought to know how the aims of all education, the aims of his sort and stage of education, the aims in his subject—how they will all affect his choice of topics and the combination of methods which he must use. He ought to know, also, how his method is to differ from the method of the elementary school from which his pupils come; but this, if I remember right, Professor De Garmo mentions, casually, but once. In short, the book loses in value because it approaches its subject almost wholly from the side of the concept: it presents clearly, completely, and attractively the logical basis of the teaching process wherever that process becomes in any degree scientific; but the living institution with which the book is supposedly concerned, the American high school (now so much the storm-center of educational conflict) is not constantly and concretely present in its pages, and its mission remains, therefore, partly unfulfilled.

This leads me at length to the digression for which I first sought sanction. I would urge upon education, namely, that same policy which Professor James has urged upon philosophy—the approach to all its problems from the side of the concrete conflicts of experience. I am not enamoured of philosophical programs based on pragmatism; indeed, I hold that the concept must play a nobler rôle in the discovery of truth than the percept; but theoretical problems first become vital issues when they are crystallized in conflicts of practise, and they are best approached from the side of those conflicts. This is just now particularly true, moreover, of education; especially of secondary education; and for two reasons. It is true in the first place because education has to fight a tendency, at times almost perverse, towards dogmatic assertion that the subject offers no material for truly scientific study. College instructors, who deal with high-school problems constantly (in the matter of entrance examinations), are often the worst offenders here. They cling to the old half-truths: Teachers are born, not made; and A teacher need only know his subject—experience will solve all his difficulties in method and management. They see—particularly if they are members of teachers' associations for advancement of the work in the several subjects of the high-school curriculum—they see the real problems of high-school method in process of constant discussion. They do not see that these problems involve, or lead out into, larger problems of educational theory; they do not see that the concrete conflict and the theoretical issue must be worked out together, one in the light of the other. And the academic remoteness of even worthy pedagogical productions does nothing to enlighten them. In the second place, educational theory ought to keep close to the practical issue because the practical issue is just now so momentous. If theory is worth anything as a guide to conduct in school affairs, now is her chance to prove it. From the kindergarten through the university there is educational war, with the battle-center in the high school. Thoughtful people everywhere are giving earnest consideration to the new plea for vocational training in adolescence; they look to the educational expert for light. Men who have never read a page of pedagogy, but who must shape school policies in great cities, are willing to listen to any one who can really inform them. Educational theory has nothing to lose, not even in normal classes, by ceasing to be esoteric and by giving up its own terminology. Like philosophy and religion, it must speak to all cultivated men in the language of their common world. Pragmatism has made us realize this much, at any rate.

I regret, therefore, that so valuable a book as Professor De Garmo's "Processes of Instruction" should have so little bearing on present issues. In the preface occur these words: "We should not . . . try to distinguish between cultural and non-cultural instruction. . . . Culture and discipline are . . . the inevitable concomitants of all good instruction. . . ." This I hold to be true, and of great consequence; but I wish most heartily that Professor De Garmo had pointed the moral for the American high school. Miss Susan E. Blow has done for the kindergarten, the most highly professionalized department of our public-school system, a service yet to be done for the elementary school, the high school, and the college: she has shown in her "Educational Issues in the Kindergarten" how differences in practise are connected with differences in principle, and how principle and practise stand or fall together. Educational theory will come into its own when it tries harder to do what economic theory is beginning to do—apply to the actual issues in every part of its field.

HENRY W. HOLMES.

HARVARD UNIVERSITY.